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The 1991 Iowa Corn Yield Test Report, District 3

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Abstract

Results of the Iowa Corn Yield Test are published to aid Iowa farmers in selecting corn hybrids. This is the seventy-second consecutive year for the test. Data from these tests are available in three different formats. These data are first released on Iowa State University's Cooperative Extension Services' computer communication network (EXNET) usually around Thanksgiving and are available at county extension offices. Anyone can subscribe to EXNET at a cost of $25 per year and receive the data as soon as they are released. All that is required is a computer, a modem, and the cost of a telephone call.

Disciplines

Agriculture

AGRONOMY
• Crops
• Soils
• Climate

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THE 1991 IOWA CORN YIELD TEST REPORT

District 3

Results of the Iowa Corn Yield Test are published to aid Iowa farmers in selecting corn hybrids. This is the seventy-second consecutive year for the test. Data from these tests are available in three different formats. These data are first released on Iowa State University's Cooperative Extension Services' computer communication network (EXNET) usually around Thanksgiving and are available at county extension offices. Anyone can subscribe to EXNET at a cost of $25 per year and receive the data as soon as they are released. All that is required is a computer, a modem, and the cost of a telephone call. For additional information contact:

EXNET
108 Atanasoff Hall
Iowa State University
Ames, Iowa 50011
Telephone 1 515 294-8658

The next released format of the data is on computer diskettes that include a hybrid selection computer program (described in another section of this report). These are usually available a week to 10 days after the data are released on EXNET.

The final format is this publication. This year in an effort to make this a free publication and get it into the hands of as many farmers as possible, Iowa State University Cooperative Extension Service and *Iowa Farmer Today* have agreed to try this format as a method of distribution.

The presentation of data for the hybrids tested does not imply approval or endorsement by the authors or by the agencies sponsoring or conducting the test. Entries in tables 1 and 2 are designated by brand name and variety.

1991 Procedure

Producers of corn seed and Iowa State University were eligible to enter varieties in the Iowa Corn Yield Test. Each producer was allowed a maximum of six paid entries per district. All entries had to be available in a quantity of at least 10 bushels of seed.

Two hundred twenty-five entries were evaluated in this district. Fifteen of the entries determined to be widely grown were entered by Iowa State University. In June, of even numbered years, approximately 21,000 survey cards are mailed in the state. Recipients of these cards are determined by a random drawing of names from land owners listed in the county plat books. Based on the survey results, the 15 hybrids grown on the most acres in the district are classified as widely grown for that district. The widely grown hybrids (*) in this report were determined by the 1990 survey. Iowa State University entered a maximum of three widely grown hybrids of any given brand. These entries were given priority over the remaining 210 entries made by seed producers.

Each entry was replicated four times in four-row plots at a planting rate of 28,000 kernels per acre at each location. All locations were machine-planted. The center two rows of each plot were harvested with a corn combine. No gleanings or dropped ears were included in yield data. A moisture determination was made from each plot, and yields were corrected to 15.5 percent moisture for shelled corn.

Starting with the 1988 report, data for protein, oil, and starch percentages are included in the Iowa Corn Yield Test Report. Protein, oil, and starch were measured on a near-infrared reflectance analyzer that was calibrated against accepted chemical methods. Charles R. Hurburgh, Jr. of the Department of Agricultural Engineering at Iowa State University is responsible for analyzing the samples. Samples for nutrient analysis were collected from one field in each district. Data presented are averages of the four replicated plots in that field. To be consistent with the yield data, the protein, oil, and starch data were corrected to 15.5 percent moisture.

How Information Is Presented

The agronomic data presented are averages of three locations in 1989, 1990, and 1991. Yields in bushels per acre and percentage of moisture, root lodging, stalk lodging, dropped ears, stand, protein, oil, and starch are shown for all entries in 1991 and for those tested in 1989 and 1990 that were in the 1991 test.

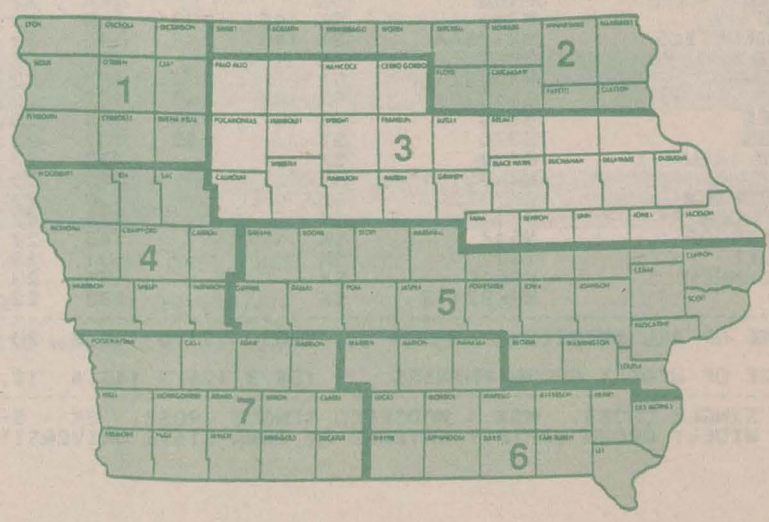
Interpretation of Results

Yield differences due to variation in soil, fertility, moisture availability, insect infestation, and diseases, plus any variation due to planting and harvesting techniques, are identified through statistical analysis. The LSD values for yield shown in tables 1 and 2 represent, in bushels per acre, the amounts of yield variation that could be due to variations in the factors just mentioned. In comparing varieties, yield differences greater than the LSD value can be attributed to genetic differences in the yield potential of these varieties; yield differences less than the LSD value are not statistically different and could have been due to other factors.

Grain moistures shown in tables 1 and 2 are indications of maturity and natural drying rate. Maturity of varieties entered generally ranged from early to full season. Yield comparisons should be made among varieties of similar maturity.

It is important to select varieties having stable performance over a range of environmental conditions. High yields for two or more consecutive years indicate stable performance. Supplemental yield and agronomic information about specific varieties may be obtained from seed corn dealers and neighbors who have grown these varieties.

The protein, oil, and starch percentage data (tables 1 and 2) are quality traits important to different end-users of corn. For feed, protein is of primary interest; for wet-mill processing (ethanol and sweeteners), oil and starch content are important. These factors are under development as additions to the U.S. standards as optional criteria. Several firms have begun testing these characteristics on an exploratory basis.



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University Extension

Ames, Iowa

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TABLE 2. AVERAGES OF 1990-91 AND 1989-91 OF VARIETIES TESTED IN DISTRICT 3 . LSD FOR YIELDS ARE 6 BUSHELS FOR 89-91 AND 7 BUSHELS FOR 90-91.

89-91 PROTEIN LSD = 0.2 . 89-91 OIL LSD = 0.1 . 89-91 STARCH LSD = 0.5 .
90-91 PROTEIN LSD = 0.2 . 90-91 OIL LSD = 0.1 . 90-91 STARCH LSD = 0.4 .

			YIELD BU/A		MOISTURE PCT		ROOT LDG PCT		STALK LDG PCT		DROP EAR PCT		STAND PCT		PROTEIN PCT		OIL PCT		STARCH PCT	
BRAND	VARIETY	CROSS	89-91	90-91	90-91	89-91	89-91	90-91	89-91	90-91	89-91	90-91	89-91	90-91	89-91	90-91	89-91	90-91	89-91	90-91
DAIRYLAND	DX1100	SX		120	16.2			0		3		0		88		8.2		3.4		60.4
*PIONEER	3615	SX	129	129	17.1	16.8	1	0	2	1	0	0	86	87	7.9	8.2	3.6	3.6	60.3	60.1
*DEKALB	DK535	SX	132	130	17.6	17.4	3	0	3	2	0	0	90	90	7.7	8.1	3.5	3.5	60.6	60.6
GUTWEIN	2191	SX		126	17.7			0		3		0		89		8.4		3.6		59.9
*NORTHRUP KING	N4545	SX	135	133	17.7	17.3	1	0	3	2	0	0	87	88	8.0	8.3	3.7	3.7	60.3	60.2
TERRA	TR1020	SX		117	17.7			0		3		0		83		7.8		3.6		60.5
GARST	8708	SX	124	122	17.7	17.3	1	1	4	5	0	0	89	88	8.0	8.3	3.7	3.6	60.4	60.3
TERRA	TR1010	SX	126	126	17.9	17.4	1	0	2	2	0	1	88	90	7.8	8.1	3.7	3.7	60.3	60.4
NORTHRUP KING	N4428	SX		135	18.1			1		2		0		89		8.1		3.7		60.3
MIDDLEKOOP	M596	SX		119	18.2			0		1		0		80		8.4		3.9		60.2
KALTENBERG	6305	SX		140	18.5			0		2		0		88		8.1		3.5		60.5
CROWS	210	SX	129	131	18.5	18.0	2	0	6	5	0	0	85	84	8.1	8.5	3.7	3.7	60.1	59.9
FUNK'S G BRAND	4385	SX	135	134	18.6	18.0	1	1	2	2	0	0	88	88	7.6	8.0	3.6	3.5	60.6	60.2
CARGILL	4327	SX	144	149	18.6	18.0	2	0	4	3	0	0	87	89	7.5	7.9	3.7	3.7	60.7	60.6
CARGILL	5327	SX		144	18.6			0		3		1		86		8.5		3.5		60.1
FUNK'S G BRAND	4393	SX	135	132	18.7	18.2	0	0	2	2	0	0	88	88	7.7	8.0	3.5	3.6	60.2	60.5
STINE	1069	SX		136	18.7			0		2		0		87		8.0		3.5		60.4
AGRIGENE	AG4500	SX	135	133	18.7	18.2	1	0	2	2	0	0	84	84	7.8	8.2	3.4	3.4	60.1	60.1
FONTANELLE	4140	SX		130	18.7			0		3		0		89		8.2		3.9		60.2
MCALLISTER	9003	SX	135	133	18.7	18.1	1	0	4	4	0	0	85	85	7.9	8.2	3.5	3.6	60.2	60.4
AMES BEST	AB113AA	SX	139	141	18.8	18.1	1	0	2	2	1	0	88	88	7.7	8.1	3.5	3.5	60.2	60.2
CORNELIUS	C446	SX	141	139	18.8	18.2	1	0	2	2	0	0	88	88	7.9	8.1	3.9	3.8	60.4	60.1
*ASGROW	RX578	SX	129	128	18.8	18.1	2	1	3	2	0	0	84	85	7.8	8.0	3.3	3.4	60.1	60.3
WYFFELS	W414	SX		132	18.8			0		1		0		85		8.4		3.5		59.7
CROWS	237	SX		125	18.8			0		5		0		82		8.6		3.7		59.8
*GARST	8599	SX	131	129	18.8	18.1	0	0	4	4	0	0	86	86	8.4	8.7	3.7	3.7	60.1	59.9
HORIZON	9107	SX		127	18.9			0		2		0		82		8.2		3.8		60.3
GOLDEN HARVEST	H2442	SX	138	134	18.9	18.8	3	0	3	2	0	0	84	83	7.9	8.2	3.7	3.7	60.5	60.4
JACOBSEN	JS17	SX	139	133	18.9	18.4	1	0	2	2	0	0	83	81	7.8	8.1	3.9	4.0	60.6	60.5
*ASGROW	RX626	SX	131	129	19.0	18.3	0	0	2	2	1	1	86	86	7.8	8.3	3.4	3.4	60.3	60.2
MIDDLEKOOP	M585	SX	141	136	19.0	18.2	1	0	3	3	0	0	88	88	7.9	8.1	3.8	3.9	60.3	60.5
PFISTER	2250	SX	141	141	19.0	18.3	1	0	2	2	0	0	88	88	7.7	8.2	3.5	3.6	60.3	60.3
HOBART	3890A	SX	140	139	19.0	18.5	1	0	2	2	0	0	88	88	7.7	8.1	3.5	3.5	60.4	60.4
GARST	8574	SX		137	19.1			0		1		0		86		8.2		3.4		60.0
JACOBSEN	JS22	SX	144	143	19.1	18.4	4	2	3	3	0	0	87	88	7.7	8.2	3.7	3.7	60.6	60.3
KRUGER	8107++	SX	141	140	19.1	18.7	2	1	4	5	0	0	87	88	8.1	8.4	3.7	3.7	60.0	59.8
EPLEY	EX250	SX	134	134	19.2	18.6	1	0	3	2	1	1	86	85	7.6	8.0	3.5	3.5	60.2	60.3
*NORTHRUP KING	S5750	SX	136	136	19.2	18.8	1	0	2	2	0	0	87	89	7.6	8.1	3.5	3.5	60.6	60.2
*PIONEER	3475	SX	135	134	19.2	18.8	1	0	3	3	1	1	84	84	7.6	7.7	3.6	3.7	60.5	60.8
*DEKALB	DK584	SX	135	133	19.5	19.2	1	1	3	2	1	0	88	89	8.3	8.6	3.7	3.7	60.2	60.1
*DEKALB	DK547	SX	137	139	19.7	18.9	1	0	2	2	0	0	85	86	8.3	8.5	3.6	3.7	60.1	60.1
GOLDEN HARVEST	H2486	SX	144	140	19.8	19.2	3	0	4	4	0	0	87	86	8.1	8.4	3.6	3.7	59.9	59.9
SOI	9080	MSX		136	19.9			1		3		0		86		8.1		3.7		60.6
MIDDLEKOOP	M589	SX		129	20.0			0		3		0		88		7.8		3.6		60.6
DAIRYLAND	DX1107	SX	137	132	20.2	19.5	3	0	4	3	1	1	86	84	7.9	8.3	3.6	3.6	60.0	59.9
CORNELIUS	C612A	SX	141	141	20.4	20.0	0	0	3	3	0	0	86	85	7.8	8.0	3.7	3.9	60.6	60.7
RAMY	R4080	SX		130	20.4			1		4		0		82		8.1		3.6		60.3
PIONEER	3503	SX		144	20.6			0		2		0		84		8.1		3.8		60.4
NC+	4275	SX		154	20.8			0		2		0		89		7.5		3.6		60.8
DYNA GROW	5410	SX		139	21.0			0		3		0		82		8.2		4.0		60.6
PIONEER	3417	SX		147	21.1			0		2		0		85		7.9		3.8		60.7
FUNK'S G BRAND	4485	SX	145	148	21.2	20.6	1	0	2	2	0	0	88	88	7.9	8.2	3.7	3.8	60.5	60.4
GARST	8505	SX		137	21.2			0		1		0		88		7.8		3.7		60.6
AMES BEST	SX16	SX	142	145	21.3	20.7	1	0	3	3	0	0	87	87	7.9	8.3	3.7	3.7	60.6	60.6
NORTHRUP KING	N6330	SX		143	21.3			0		2		0		88		7.9		3.7		60.5
WYFFELS	W682	SX		141	21.3			0		2		0		83		7.9		3.8		60.2
AGRA SEED	3715	SX	144	145	21.4	20.7	0	0	2	2	0	0	86	87	7.9	8.3	3.7	3.7	60.6	60.3
CARGILL	6927	SX		139	21.4			0		2		0		88		8.2		3.8		60.4
MARK	MRK88107	SX	144	144	21.4	20.5	1	0	2	3	0	0	81	84	7.5	7.7	3.7	3.7	60.9	60.8
STINE	1113	SX		130	21.4			0		1		0		85		8.2		3.6		60.4
UTHOFF	U46	SX	141	141	21.4	20.6	0	0	1	2	0	0	88	89	7.9	8.3	3.8	3.8	60.8	60.4
MARK	MRK88109	SX		137	21.4			0		3		0		88		8.3		3.6		60.5
BOJAC	520	SX		143	21.5			0		2		0		88		7.8		3.7		60.6
KLINE	KSX30	SX		144	21.5			1		2		0		88		8.4		3.7		60.0
KLINE	KSX40	SX		142	21.5			0		2		0		88		7.8		3.6		60.8
FUNK'S G BRAND	4490	SX		142	21.5			0		2		0		89		8.4		3.7		60.0
DYNA GROW	5470	SX		144	21.6			0		2		0		88		7.8		3.7		60.8
*NORTHRUP KING	N6560	SX	148	151	21.6	20.8	1	0	2	2	0	0	89	90	7.9	8.3	3.7	3.7	60.3	60.0
RENZE	6338	SX		144	21.6			0		2		0		89		7.8		3.6		60.6
SHISSLER	GR8-179	SX	144	146	21.6	21.1	0	0	2	2	0	0	89	89	7.9	8.2	3.7	3.7	60.2	60.3
CORNELIUS	C614	SX		144	21.6			1		3		0		89		8.3		3.7		59.9
HENKEL	H185	SX		141	21.6			0		2		0		87		8.4		3.7		60.0
KRUGER	8111A	SX	142	141	21.6	20.9	1	1	2	2	0	0	89	90	8.1	8.4	3.6	3.7	60.2	60.3
PFISTER	2375	SX		152	21.6			0		3		0		88		7.7		3.7		61.0
SHISSLER	GR8-170	SX		140	21.6			0		3		0		89		7.8		3.7		60.3
AGRIGENE	AG6450	SX	143	143	21.7	20.9	1	0	2	2	0	0	86	86	8.0	8.3	3.6	3.7	60.0	60.2
WILSON	1640	SX	142	145	21.7	20.9	0	0	2	2	0	0	87	87	8.1	8.4	3.7	3.7	60.4	60.3
AG SERVICES	A8812	SX	139	139	21.7	20.8	0	0	2	2	0	0	86	89	8.1	8.5	3.7	3.7	60.2	60.0
*GARST	8532	SX	143	141	21.7	20.9	0	0	1	2	0	0	89	89	7.9	8.2	3.8	3.8	60.7	60.4
JACOBSEN	JS45	SX	142	140	21.7	20.9	1	0	2	2	0	0	88	88	7.9	8.2	3.7	3.7	60.2	60.2
OTTILIE	2465	SX	146	150	21.7	21.0	1	1	2	3	0	0	87	88	8.0	8.3	3.7	3.8	60.3	60.3
RAMY	R5000	SX		138	21.7			1		2		0		83		7.9		3.7		60.3
GOLDEN HARVEST	H2477	SX		144	21.8			0		5		0		86		8.4		3.6		59.9
HERMANN	2045	SX		139	21.8			0		2		0		86		7.6		3.7		60.8
HOBART	2800A	SX	143	144	21.8	20.9	1	0	2	2	0	0	85	85	8.0	8.3	3.7	3.7	60.5	60.4
JACQUES	7770	SX		146	21.8			0		2		0		88		8.1		3.8		60.4
RAMY	R5012	SX		147	21.8			0		2		0		86		8.4		3.6		60.0
HENKEL	H175	SX		141	21.8			0		2		0		87		7.6		3.7		60.8
OTTILIE	2445	SX	142	142	21.8	20.7	1	0	2	2	0	0	86	87	7.3	7.7	3.7	3.7	61.0	61.0
*PIONEER	3362	SX	152	151	21.8	21.2	1	0	2	3	0	0	86	85	7.3	7.7	3.6	3.6	60.8	60.6
CORNELIUS	C601	SX	145	141	21.9	20.7	1	0	2	3	0	0	87	86	7.4	7.7	3.7	3.7	60.7	60.7
DYNA GROW	5491	SX		144	21.9			0		2		0		88		8.3		3.8		60.4
GUTWEIN	2484	SX		134	21.9			0		3		0		87		7.7		3.6		60.8
*ASGROW	RX746	SX	141	142	22.0	21.2	0	0	2	2	0	0	89	88	8.0	8.2	3.7	3.8	60.1	60.3
CORNELIUS	C612	SX	138	138	22.0	21.0	0	0	2	3	0	0	88	88	8.0	8.4	3.6	3.6	60.5	60.3
MCALLISTER	8611	SX	144	146	22.0	21.0	0	0	2	2	0	0	88	90	8.0	8.3	3.7	3.7	60.3	60.2
CROWS	498	SX		140	22.0			0		2		0		88		8.3		3.8		60.4
UTHOFF	U43	SX		144	22.0			0		2		0		90		7.8		3.7		60.8
BOJAC	454	SX		147	22.0			0		2		0		89		8.2		3.7		60.1
CHALLENGER	CS411	SX	138	140	22.0	21.1	0	0	2	2	0	0	84	86	7.8	8.1	3.8	3.8	60.5	60.3
RENZE	6354	SX	145	147	22.1	21.4	1	1	2	2	0	0	90	90	8.1	8.5	3.8	3.8	60.3	60.0
RENZE	6341	SX	143	143	22.2	21.5	4	1	3	2	0	0	89	90	7.8	8.1	3.6	3.6	60.3	60.2
M/W GENETICS	SX108AA	SX	143	141	22.3	21.5	3	0	3	2	0	0	87	88	7.9	8.3	3.6	3.5	60.5	60.2
GOLDEN HARVEST	H2532	SX	153	153	22.3	21.7	3	1	5	6	0	0	86	85	7.7	8.1	3.5	3.6	60.3	60.1
CROWS	488	SX	147	152	22.5	21.7	3	1	4	3	0	0	85	87	7.5	7.8	3.7	3.7	60.7	60.7
MCALLISTER	9009	SX	141	145	22.5	21.4	0	0	2	3	0	0	85	87	7.5	7.9	3.6	3.7	60.6	60.6
OTTILIE	2455	SX	146	145	22.5	21.6	0	0	2	2	0	0	90	90	8.1	8.4	3.7	3.7	60.5	60.4
SOI	9100	SX		138	22.6			0		3		0		87		8.3		3.7		60.2
MIDDLEKOOP	M582	SX	143	143	22.6	21.7	1	0	3	3	0	0	91	90	8.2	8.5	3.7	3.7	60.1	59.9
HUGHES	5870	SX	143	144	22.7	21.8	1	0	2	2	0	0	88	88	8.0	8.4	3.7	3.7	60.2	60.0
*GARST	8519	SX	145	148	23.0	21.9	1	0	3	2	0	0	88	90	8.0	8.3	3.8	3.8	60.5	60.4
HUGHES	5919	SX	139	140	23.0	22.0	1	0	3	3	0	0	83	85	7.9	8.3	3.6	3.6	60.2	60.2
AGRA SEED	3514	SX	138	144	23.6	22.4	1	0	2	2	0	0	85	88	8.1	8.4	3.7	3.7	60.1	59.9
ASGROW	RX727	SX		145	23.7			0		2		0		89		7.9		3.8		60.3
HUGHES	6370	SX		141	23.8			1		3		0		88		8.5		3.6		60.1
RENZE	6412	SX	147	149	24.0	23.2	2	0	2	2	0	0	88	89	7.8	8.0	3.8	3.9	60.5	60.4
AVERAGE OF ALL ENTRIES			139.9	139.2	19.9	20.6	1.1	0.3	2.5	2.4	0.2	0.2	86.8	87.0	7.9	8.1	3.6	3.7	60.4	60.3
AVERAGE OF WIDELY GROWN ENTRIES			137 3	136 9	19.2	19.8	0.9	0.3	2.4	2.1	0.3	0.2	86.9	87.4	7.9	8.2	3.6	3.6	60.4	60.2

SX = SINGLE CROSS. MSX = MODIFIED SINGLE CROSS. 3X = 3-WAY CROSS. 4X = 4-WAY CROSS. SXB = BLEND OF SINGLE CROSSES
* = WIDELY GROWN VARIETY ENTERED BY IOWA STATE UNIVERSITY

TABLE 1. AVERAGE PERFORMANCE OF VARIETIES TESTED IN DISTRICT 3. 28,000 PLANTING RATE. LSD FOR 1991 YIELD IN BUSHELS IS 12. 1991 PROTEIN PCT LSD = 0.4. 1991 OIL PCT LSD = 0.2. 1991 STARCH PCT LSD = 0.5.

			YIELD BU/A			MOISTURE PCT			ROOT LDG PCT			STALK LDG PCT			DROP EAR PCT			STAND PCT			PROTEIN PCT			OIL PCT			STARCH PCT		
BRAND	VARIETY	CROSS	1989	1990	1991	1991	1990	1989	1991	1990	1989	1991	1990	1989	1991	1990	1989	1991	1990	1989	1991	1990	1989	1991	1990	1989	1991	1990	1989
DAIRYLAND	DX1100	SX		113	126	16.6	15.8		0	0		2	5		0	0		92	85		8.8	7.5		3.5	3.3		60.3	60.4	
GARST	8777	SX			123	17.0			0			2			0			91			8.2			3.6			60.7		
CROWS	179	SX			128	17.2			0			3			0			89			9.4			3.7			59.4		
GOLDEN HARVEST	H2390	SX			144	17.5			0			1			0			91			8.9			3.8			59.9		
*PIONEER	3615	SX	129	122	137	17.6	16.6	16.1	1	0	3	1	2	3	0	0	0	89	85	84	8.6	7.8	7.2	3.8	3.4	3.6	60.2	60.0	60.8
STINE	1021	SX			127	17.6			0			2			1			91			8.3			3.7			60.4		
GARST	8708	SX	129	114	130	17.7	17.8	16.4	0	2	2	2	8	3	0	0	0	92	84	91	8.6	7.9	7.4	3.8	3.4	3.8	60.4	60.1	60.8
GUTWEIN	2191	SX		114	138	17.8	17.6		0	0		1	5		0	0		93	85		8.8	8.0		3.8	3.3		60.1	59.7	
*NORTHRUP KING	N4545	SX	140	132	134	17.8	17.6	16.5	0	0	4	1	3	4	0	0	0	91	84	85	9.0	7.5	7.4	3.8	3.6	3.6	59.7	60.6	60.7
CROWS	237	SX		110	140	17.9	19.8		0	0		2	8		0	0		90	75		8.9	8.3		3.9	3.5		59.8	59.7	
DAIRYLAND	STEALTH1203	SX			122	17.9			1			4			0			92			8.6			3.6			60.4		
NORTHRUP KING	N4428	SX		131	138	18.0	18.3		0	2		1	4		1	0		88	90		8.5	7.6		3.8	3.5		60.5	60.1	
SOI	9040	SX			129	18.0			0			1			0			87			8.9			3.7			60.3		
*DEKALB	DK535	SX	135	128	132	18.1	17.2	16.8	0	0	8	2	3	5	1	0	1	94	85	90	8.5	7.7	6.9	3.6	3.4	3.5	60.6	60.5	60.8
*GARST	8599	SX	137	112	146	18.1	19.6	16.7	0	0	0	2	5	4	0	0	0	92	80	86	9.2	8.2	7.7	3.8	3.5	3.7	59.8	60.0	60.6
STINE	1012	SX			127	18.1			0			1			0			84			9.4			3.9			59.4		
TERRA	TR1020	SX		113	120	18.1	17.3		0	0		2	4		0	1		89	78		8.3	7.3		3.7	3.5		60.7	60.3	
CARGILL	5327	SX		140	147	18.2	19.1		0	1		2	3		0	1		91	81		9.0	8.0		3.6	3.4		60.2	59.9	
FUNK'S G BRAND	4385	SX	138	132	137	18.2	19.0	16.7	0	1	1	1	2	3	0	0	0	91	85	88	8.6	7.4	6.8	3.7	3.3	3.7	60.5	59.9	61.4
MIDDLEKOOP	M596	SX		116	121	18.2	18.3		0	0		0	3		0	0		90	71		9.4	7.4		3.8	3.9		59.6	60.8	
TERRA	TR1010	SX	124	123	130	18.2	17.6	16.5	0	1	2	1	3	3	1	0	0	95	85	83	8.4	7.7	7.4	3.8	3.6	3.6	60.5	60.3	60.2
DEKALB	DK554	SX			165	18.3			0			2			0			90			8.5			3.7			60.2		
*ASGROW	RX578	SX	131	121	135	18.4	19.2	16.7	0	2	3	1	3	4	1	0	0	90	80	84	8.6	7.4	7.4	3.5	3.3	3.2	60.5	60.0	59.9
HORIZON	5151	SX			138	18.4			0			1			0			91			8.8			3.6			60.4		
AMES BEST	AB113AA	SX	135	133	150	18.5	19.0	16.9	0	0	2	1	4	2	1	0	1	91	86	87	8.6	7.5	7.0	3.6	3.4	3.6	60.4	59.9	60.4
CARGILL	4327	SX	133	140	158	18.5	18.8	16.6	0	0	7	2	4	6	0	0	1	91	86	85	8.3	7.4	6.9	3.8	3.5	3.7	60.7	60.4	60.9
CROWS	210	SX	125	119	142	18.5	18.5	17.1	0	0	6	2	8	7	0	0	1	87	82	86	8.6	8.3	7.3	4.0	3.3	3.7	60.1	59.6	60.5
BOJAC	323	SX			149	18.6			0			2			1			93			8.9			3.8			60.1		
FUNK'S G BRAND	4393	SX	140	129	135	18.6	18.8	17.3	0	0	1	2	1	2	0	0	0	92	84	86	8.7	7.2	7.1	3.7	3.5	3.3	60.5	60.4	59.8
KALTENBERG	6305	SX		136	144	18.6	18.4		0	0		1	3		0	1		92	85		8.6	7.5		3.5	3.4		60.5	60.4	
PAYCO	749	SX			134	18.6			0			2			1			92			8.2			3.6			60.5		
SOI	905M	SX			138	18.6			0			2			1			88			8.2			3.8			60.7		
CORN COUNTRY	9102	SX			128	18.7			0			2			1			93			8.0			3.7			60.9		
HENKEL	H160	SX			146	18.7			0			1			1			94			8.7			3.6			60.1		
NC+	3795	SX			154	18.7			0			2			0			87			8.6			3.9			60.2		
CENEX/LAND O'LAKE	560	SX			135	18.8			0			0			1			89			8.6			3.6			60.4		
*DEKALB	DK547	SX	134	123	155	18.8	20.6	17.3	0	0	3	1	4	3	1	0	0	94	78	84	9.0	8.0	7.9	3.8	3.6	3.5	59.8	60.3	60.2
GREAT LAKES	521	SX			147	18.8			0			1			0			94			8.5			3.8			60.5		
HOBART	2150	SX			126	18.8			0			2			1			90			8.4			3.7			60.6		
HOBART	3890A	SX	141	132	146	18.8	19.3	17.5	0	0	2	0	3	2	0	0	1	92	84	89	8.6	7.6	6.9	3.5	3.4	3.5	60.5	60.2	60.4
JACOBSEN	JS17	SX	150	114	152	18.8	19.1	17.4	0	0	4	1	3	2	1	0	1	90	73	86	8.5	7.6	7.4	4.1	3.8	3.9	60.3	60.6	60.9
KRUGER	8108	MSX			139	18.8			0			1			0			89			8.7			3.6			60.0		
PFISTER	2250	SX	141	127	155	18.8	19.2	17.0	0	0	3	1	2	3	0	0	1	92	85	88	8.9	7.5	6.8	3.6	3.5	3.3	60.1	60.5	60.3
STINE	1069	SX		128	144	18.8	18.6		0	0		1	3		1	0		90	83		8.5	7.5		3.5	3.4		60.4	60.3	
THOR-O-BRED	420	SX			142	18.8			0			1			0			93			8.8			3.4			60.2		
WYFFELS	W496	SX			142	18.8			0			1			0			91			8.7			3.7			60.4		
AGRIGENE	AG4500	SX	138	132	134	18.9	18.5	17.1	0	1	3	1	3	2	0	0	1	87	81	85	8.7	7.7	6.9	3.5	3.3	3.4	60.3	59.8	60.1
CHALLENGER	CS506	SX			158	18.9			0			2			1			93			8.8			3.9			59.9		
MARK	MRK92103	SX			150	18.9			0			1			0			90			8.6			3.8			60.1		
TRELAY	SP702	SX			134	18.9			0			1			0			90			8.3			3.8			60.6		
WILSON	1444	SX			142	18.9			0			2			0			92			8.8			3.8			59.8		
WYFFELS	W414	SX		119	146	18.9	18.7		0	0		0	3		0	0		90	79		8.9	7.8		3.7	3.3		60.4	59.0	
BOJAC	358	SX			137	19.0			0			1			0			93			8.1			3.9			60.5		
CORNELIUS	C446	SX	145	128	151	19.0	18.5	17.1	0	1	1	0	4	3	0	0	0	91	85	88	8.6	7.5	7.5	4.0	3.6	4.0	60.1	60.1	61.0
FONTANELLE	4140	SX		122	139	19.0	18.4		0	0		1	5		0	0		91	86		8.8	7.5		4.0	3.7		59.9	60.4	
KRUGER	8107++	SX	143	135	145	19.0	19.3	17.7	0	1	5	1	8	3	0	0	0	92	85	84	8.8	7.9	7.7	3.9	3.4	3.7	59.9	59.7	60.5
LYNKS	2682	SX			136	19.0			0			2			0			91			8.1			3.8			60.7		
STINE	1125	SX			138	19.0			0			2			0			91			8.0			3.7			61.0		
CROWS	440	SX			132	19.1			0			1			1			91			8.6			3.6			60.2		
DAIRYLAND	STEALTH1207	SX			144	19.1			0			1			0			89			8.7			3.6			60.5		
HOBART	2100	SX			154	19.1			0			1			0			91			8.6			3.9			60.1		
JACOBSEN	JS22	SX	145	129	157	19.1	19.2	17.0	0	3	8	2	4	3	0	0	0	93	82	86	8.7	7.6	6.8	3.8	3.5	3.8	60.3	60.3	61.2
MIDDLEKOOP	M585	SX	150	119	153	19.1	18.9	16.6	0	0	3	2	4	4	0	0	0	93	84	86	8.5	7.7	7.5	4.0	3.8	3.7	60.5	60.4	60.1
OTTILIE	2432	SX			148	19.1			0			1			0			92			8.7			3.8			60.4		
*ASGROW	RX626	SX	136	126	131	19.2	18.7	17.0	0	0	0	1	2	1	1	0	1	90	82	87	9.1	7.4	7.0	3.4	3.4	3.4	60.2	60.2	60.4
CARGILL	5877	SX			133	19.2			0			0			0			88			8.5			3.9			60.1		
EK PREMIUM	EK7740	SX			131	19.2			0			3			0			88			8.6			3.9			60.2		
GARST	8574	SX		133	141	19.2	19.1		0	0		1	1		1	0		91	82		8.8	7.5		3.5	3.3		60.2	59.8	
GOLDEN HARVEST	H2486	SX	151	135	146	19.2	20.5	17.9	0	0	7	2	5	4	0	0	1	90	83	88	9.1	7.7	7.5	3.8	3.5	3.4	59.6	60.2	59.8
HORIZON	9107	SX		117	137	19.2	18.6		0	0		1	3		0	0		83	82		8.7	7.6		4.0	3.6		60.3	60.3	
KRUGER	9007	SX			153	19.2			0			2			0			94			8.6			3.9			60.2		
FONTANELLE	4180	SX			155	19.3			0			0			0			91			8.3			3.8			60.5		
MCALLISTER	9003	SX	139	123	142	19.3	18.2	16.8	0	1	1	1	6	6	0	0	0	88	83	84	8.8	7.5	7.3	3.8	3.4	3.4	60.2	60.5	59.9
AGVENTURE	451	SX			154	19.4			0			2			0			93			8.7			3.7			60.5		
BLANEY	B603	SX			127	19.4			0			1			1			90			8.3			3.7			60.5		
CENEX/LAND O'LAKE	522	SX			146	19.4			0			2			1			92			8.3			3.9			60.6		
CURRY	2165	SX			157	19.4			0			3			1			93			8.9			3.7			60.1		
EPLEY	EX250	SX	133	126	142	19.4	19.0	17.4	0	0	4	1	4	3	1	0	1	89	82	89	8.5	7.4	7.0	3.6	3.4	3.4	60.4	60.2	60.1
FONTANELLE	4090	SX			140	19.4			0			1			0			87			7.8			3.7			60.8		
GOLDEN HARVEST	H2485	SX			149	19.4			0			1			1			91			8.1			3.8			60.8		
HAWKEYE HYBRID	SX16	SX			149	19.4			0			1			0			94			8.6			3.9			60.3		
KLINE	KSX20A	SX			142	19.4			0			2			0			93			8.9			3.7			59.9		
KLINE	KSX25	SX			136	19.4			0			1			0			88			8.6			3.7			60.4		
*NORTHRUP KING	S5750	SX	137	120	152	19.4	19.1	17.8	0	1	2	0	3	3	0	0	0	91	86	83	8.5	7.7	6.7	3.6	3.3	3.7	60.5	59.9	61.3
CENEX/LAND O'LAKE	544	SX			144	19.5			0			2			0			91			8.5			3.5			61.0		
CURRY	4469	SX			146	19.5			1			1			1			90			8.9			3.6			60.2		
*DEKALB	DK584	SX	141	122	144	19.5	19.4	18.8	0	2	0	1	3	4	1	0	1	97	81	86	8.9	8.2	7.9	3.8	3.5	3.7	59.9	60.3	60.4
HUGHES	5640	SX			129	19.5			0			1			0			92			9.2			3.6			59.8		
KRUGER	9108	SX			147	19.5			0			1			0			89			8.5			3.6			60.6		
MIDDLEKOOP	M589	SX		123	135	19.5	20.6		0	0		2	4		0	0		92	84		8.1	7.5		3.7	3.4		60.8	60.3	
CORNELIUS	C515	SX			149	19.6			0			1			0			92			8.1			3.6			61.1		
SHISSLER	LG-2535	SX			137	19.6			0			1			1			93			8.2			3.9			60.6		
SOI	9080	MSX		127	146	19.6	20.2		0	1		2	4		1	0		90	83		8.1	8.1		3.7	3.6		60.9	60.3	
HUGHES	5760	SX			139	19.7			0			2			0			91			8.9			3.6			60.2		
KRUGER	9107	SX			140	19.7			0			1			0			92			8.6			3.7			60.5		
ASGROW	RX681	SX			151	19.8			0			2			0			89			9.4			3.7			59.4		
AGRIGENE	AG5660	SX			150	19.9			0			1			0			94			8.3			3.8			60.9		
CORNELIUS	C612A	SX	142	129	153	19.9	20.9	19.1	0	0	0	1	6	3	0	0	1	89	81	86	8.5	7.5	7.4	3.9	3.8	3.4	60.4	61.0	60.3
*PIONEER	3475	SX	137	133	136	19.9	18.6	17.8	0	0	4	2	4	3	1	0	1	87	81	82	8.0	7.4	7.4	3.9	3.5	3.3	61.0	60.5	59.9
TRELAY	8007	SX			145	19.9			0			2			0			94			9.0			3.8			60.0		
MIDDLEKOOP	M509	SX			144	20.0			0			1			0			91			8.6			3.5			60.8		
DYNA GROW	5410	SX		128	150	20.1	21.9		0	1		2	4		0	0		90	75		8.5	7.8		4.1	3.8		60.3	60.8	
JACOBSEN	JS14	SX			148	20.1			0			2			0			88			8.8			3.7			60.3		
NC+	4275	SX		145	162	20.1	21.5		0	0		1	3		0	0		91	88		7.9	7.1		3.7	3.5		61.0	60.6	
AMES BEST	SX16	SX	136	136	154	20.2	22.5	19.3	0	0	2	1	6	2	0	0	0	92	82	87	8.7	7.8	7.3	3.6	3.7	3.7	60.7	60.4	60.8
GARST	8505	SX		127	147	20.2	22.3		0	0		2	2		0	0		91	85		8.3	7.3		3.8	3.6		60.7	60.5	
RAMY	R4080	SX		126	133	20.2	20.6		0	1		2	5		0	1		81	83		8.4	7.7		3.7	3.5		60.5	60.0	
CURRY	2172	SX			127	20.3			0			1			0			91			8.9			3.5			60.3		
DAIRYLAND	DX1107	SX	145	128	136	20.3	20.1	18.0	0	1	9	3	3	7	0	1	0	83	86	88	8.7	7.9	7.1	3.8	3.3	3.6	60.3	59.4	60.3
GOLDEN HARVEST	H2442	SX	145	124	144	20.3	17.6	18.5	0	0	9	2	2	4	1	0	0	87	78	87	8.5	7.8	7.4	3.8	3.6	3.7	60.3	60.5	60.6
HUGHES	5711	SX			158	20.3			0			1			1			89			7.9			3.8			61.0		
AGRA SEED	3715	SX	140	135	156	20.4	22.4	19.2	0	1	0	1	4	0	0	0	0	93	82	84	8.7	7.8	7.3	3.8	3.6	3.8	60.4	60.2	61.3
AGVENTURE	551	SX			152	20.4			0			1			0			89			9.0			3.7			59.9		
DYNA GROW	5470	SX		134	155	20.4	22.8		0	0		0	5		0	0		92	84		8.2	7.3		3.7	3.6		60.9	60.6	
FUNK'S G BRAND	4485	SX	138	136	161	20.4	22.1	19.4	0	0	2	1	3	3	0	0	0	92	85	88	8.7	7.7	7.2	3.8	3.7	3.6	60.3	60.4	60.8
GREAT LAKES	569	SX			147	20.4			0			1			0			92			8.0			3.6			60.9		
MARK	MRK88107	SX	145	134	154	20.4	22.4	18.7	0	0	2	2	3	2	0	0	0	89	79	75	8.0	7.3	7.1	3.7	3.6	3.7	61.1	60.4	61.2
NORTHRUP KING	N6330	SX		131	155	20.4	22.3		0	0		2	3		0	0		92	83		8.2	7.5		3.8	3.5		60.8	60.2	
AGRIGENE	AG6450	SX	144	139	146	20.5	22.9	19.3	0	1	1	0	3	2	0	0	0	91	82	85	8.8	7.7	7.6	3.7	3.6	3.4	60.2	60.2	59.7
DEKALB	DK612	SX			150	20.5			0			2			0			93			8.8			3.7			60.3		
AG SERVICES	A8812	SX	139	135	143	20.6	22.9	19.0	0	0	0	1	4	1	0	0	0	91	87	80	8.9	8.0	7.4	3.8	3.5	3.7	60.3	59.7	60.6
KALTENBERG	7205	SX			130	20.6			0			1			0			90			8.4			3.6			60.4		
KLINE	KSX30	SX		135	153	20.6	22.4		0	1		2	3		0	0		91	85		8.6	8.1		3.9	3.5		60.1	59.8	
KLINE	KSX40	SX		132	152	20.6	22.4		0	0		1	2		0	0		92	84		8.3	7.3		3.6	3.5		60.8	60.7	
NC+	4616	SX			150	20.6			0			1			0			92			8.0			3.8			60.7		
NOBLE BEAR	471	SX			158	20.6			0			1			0			92			7.6			3.8			61.5		
OTTILIE	2465	SX	138	135	165	20.6	22.9	19.4	0	2	1	1	5	1	0	0	0	93	82	85	8.7	7.9	7.3	3.9	3.6	3.6	60.2	60.3	60.4
RENZE	6338	SX		133	155	20.6	22.6		0	0		1	4		0	0		93	84		8.0	7.5		3.7	3.4		61.1	60.1	
SHISSLER	GR8-179	SX	140	134	159	20.6	22.6	20.0	0	1	0	1	3	2	0	0	0	95	84	89	8.6	7.8	7.4	3.8	3.6	3.6	60.5	60.0	60.2
TRELAY	9097	SX			158	20.6			0			1			0			92			8.2			3.8			60.7		
BOJAC	520	SX		134	153	20.7	22.3		0	0		1	4		0	0		93	83		8.3	7.3		3.8	3.6		60.7	60.5	
CURRY	2176	SX			166	20.7			0			2			0			89			8.3			3.7			60.7		
FUNK'S G BRAND	4490	SX		134	149	20.7	22.4		0	0		1	3		0	0		92	86		8.8	8.0		3.8	3.6		60.2	59.8	
JACQUES	7770	SX		138	153	20.7	22.9		0	0		1	2		0	0		90	85		8.4	7.8		3.9	3.6		60.6	60.1	
KRUGER	8111A	SX	144	131	151	20.7	22.6	19.3	0	1	2	1	4	2	0	0	0	92	88	86	8.7	8.0	7.5	3.7	3.6	3.6	60.3	60.2	60.2
*NORTHRUP KING	N6560	SX	140	136	166	20.7	22.5	19.1	0	1	1	1	3	1	0	0	0	94	87	88	8.8	7.7	7.2	3.8	3.5	3.8	60.0	59.9	61.1
RAMY	R5000	SX		131	145	20.7	22.8		0	1		1	4		1	0		90	77		8.2	7.6		3.8	3.5		60.6	59.9	
RAMY	R5012	SX		135	158	20.7	22.9		0	0		1	4		0	0		88	84		8.9	7.8		3.7	3.5		60.1	59.8	
STINE	1113	SX		128	131	20.7	22.1		0	1		2	1		0	0		89	81		8.6	7.7		3.6	3.5		60.2	60.5	
BLANEY	B608	SX			159	20.8			0			2			0			92			8.3			3.8			60.7		
CORNELIUS	C601	SX	154	131	151	20.8	23.0	18.2	0	0	2	1	4	2	0	1	0	91	82	89	8.0	7.4	6.8	3.8	3.6	3.6	61.0	60.3	60.8
CURRY	2183	SX			141	20.8			0			0			0			90			9.0			3.7			60.1		
DYNA GROW	5491	SX		134	153	20.8	23.0		0	0		1	2		0	0		92	83		8.8	7.7		3.8	3.8		60.0	60.7	
HOBART	2800A	SX	142	135	152	20.8	22.8	19.2	0	1	4	0	3	2	0	0	0	90	80	85	8.6	7.9	7.4	3.8	3.6	3.7	60.6	60.2	60.8
PIONEER	3394	SX			160	20.8			0			1			0			92			8.4			3.3			60.8		
PIONEER	3503	SX		135	154	20.8	20.5		0	0		1	3		0	0		85	83		8.4	7.8		3.9	3.7		60.6	60.1	
THOR-O-BRED	532	SX			146	20.8			0			0			0			89			8.8			3.8			60.2		
UTHOFF	U43	SX		135	153	20.8	23.2		0	0		1	3		0	0		94	87		8.0	7.5		3.8	3.6		61.0	60.6	
UTHOFF	U46	SX	142	134	147	20.8	22.0	18.9	0	0	1	1	3	1	0	0	0	92	86	86	8.7	7.8	7.3	3.8	3.7	3.9	60.3	60.4	61.6
AGRA SEED	3115	SX			160	20.9			0			1			0			93			8.8			3.7			60.4		
CORNELIUS	C612	SX	138	133	142	20.9	23.0	19.1	0	1	0	1	5	1	0	0	0	91	85	87	9.0	7.7	7.3	3.6	3.6	3.7	60.3	60.3	60.8
CROWS	498	SX		135	146	20.9	23.1		0	1		1	3		0	0		91	85		8.8	7.7		3.7	3.8		60.3	60.5	
*GARST	8532	SX	146	136	147	20.9	22.6	19.2	0	1	0	1	2	1	0	0	0	93	85	90	8.4	7.9	7.4	3.8	3.7	3.8	60.5	60.3	61.3
HENKEL	H175	SX		129	154	20.9	22.8		0	0		2	3		0	0		92	81		7.9	7.3		3.7	3.6		61.0	60.5	
JACOBSEN	JS45	SX	145	137	143	20.9	22.6	19.2	0	0	1	2	3	1	0	0	0	90	86	86	8.8	7.6	7.3	3.8	3.6	3.6	60.3	60.0	60.4
OTTILIE	2445	SX	142	136	147	20.9	22.8	18.5	0	0	3	1	3	2	0	0	0	93	82	85	8.0	7.3	6.6	3.7	3.7	3.6	61.0	60.9	61.0
PAYCO	829	SX			169	20.9			0			1			0			91			8.1			3.8			60.8		
PIONEER	3417	SX		134	160	20.9	21.3		0	0		2	2		0	0		90	81		8.0	7.7		3.9	3.6		60.8	60.5	
STURDY GROW	618A	SX			159	20.9			0			1			0			92			9.0			3.8			60.0		
TERRA	TR1090	SX			153	20.9			0			1			0			91			8.2			3.7			60.8		
TERRA	TR1125	SX			149	20.9			0			1			0			91			8.7			3.9			60.0		
WILSON	1640	SX	138	136	153	20.9	22.5	19.2	0	0	1	0	4	1	0	0	0	92	82	87	8.7	8.0	7.5	3.8	3.6	3.6	60.1	60.4	60.7
*ASGROW	RX746	SX	140	133	151	21.0	22.9	19.6	0	1	0	1	3	3	0	0	0	92	84	90	8.7	7.7	7.5	3.9	3.7	3.5	60.0	60.5	59.8
BOJAC	454	SX		136	158	21.0	23.0		0	1		1	3		0	0		95	83		8.8	7.6		3.8	3.6		60.2	60.0	
CARGILL	6927	SX		130	148	21.0	21.8		0	0		1	3		0	0		94	82		8.6	7.8		3.9	3.6		60.3	60.4	
DAIRYLAND	DX1014	SX			150	21.0			0			0			0			90			8.8			3.8			60.2		
GREAT LAKES	583	SX			149	21.0			0			1			0			92			8.2			3.7			60.8		
GUTWEIN	2484	SX		125	142	21.0	22.8		0	0		3	3		1	0		94	80		7.9	7.5		3.7	3.5		61.3	60.3	
HAWKEYE HYBRID	SX46	SX			154	21.0			0			1			0			93			8.8			3.8			60.2		
HENKEL	H185	SX		139	143	21.0	22.3		0	1		1	3		0	0		91	83		8.9	7.9		3.8	3.6		59.9	60.0	
WYFFELS	W682	SX		125	157	21.0	21.7		0	0		2	3		0	0		91	74		8.0	7.8		4.0	3.6		60.6	59.8	
GARST	8543	SX			152	21.1			0			1			0			90			7.9			3.8			61.1		
HERMANN	2045	SX		129	149	21.1	22.5		0	0		2	2		0	0		91	81		8.0	7.2		3.7	3.6		60.9	60.7	
MARK	MRK88109	SX		130	144	21.1	21.8		0	0		1	6		0	0		92	84		8.7	7.9		3.7	3.5		60.5	60.4	
MCALLISTER	9009	SX	134	131	159	21.1	23.9	19.1	0	0	1	2	4	2	0	0	0	94	80	80	8.2	7.5	6.9	3.7	3.6	3.5	60.6	60.5	60.8
PFISTER	2375	SX		141	164	21.1	22.2		0	1		1	4		0	0		91	84		7.9	7.4		3.8	3.6		61.3	60.6	
SHISSLER	GR8-170	SX		131	149	21.1	22.2		0	0		1	4		0	0		95	84		8.1	7.5		3.8	3.5		60.8	59.8	
WHATA HYBRID	539	SX			157	21.1			0			1			0			89			8.7			4.0			59.9		
MCALLISTER	8611	SX	139	135	158	21.2	22.7	19.2	0	0	1	1	3	2	0	0	0	95	84	86	8.5	8.0	7.5	3.8	3.5	3.7	60.5	59.8	60.6
RENZE	6310	SX			124	21.2			0			1			0			91			8.9			3.5			60.1		
CHALLENGER	CS411	SX	135	132	148	21.3	22.8	19.2	0	0	0	1	3	1	0	0	0	91	81	80	8.4	7.7	7.4	3.9	3.7	3.7	60.3	60.3	60.8
EPLEY	EX3605	SX			134	21.3			0			1			0			91			9.0			3.5			60.1		
LYNKS	2692	SX			156	21.3			0			2			1			90			7.9			3.6			61.1		
RENZE	6354	SX	142	135	160	21.3	23.0	19.9	0	1	2	1	4	2	0	0	0	93	86	91	9.0	7.9	7.5	3.9	3.7	3.8	59.8	60.2	61.0
CROWS	488	SX	138	145	158	21.4	23.5	20.3	0	1	8	2	5	4	1	0	1	90	84	81	8.2	7.4	7.0	3.8	3.6	3.6	60.8	60.5	60.9
HOBART	3100	SX			123	21.4			0			0			0			86			8.5			3.6			60.5		
DAIRYLAND	STEALTH1112	SX			131	21.5			0			1			0			92			8.8			3.5			60.2		
HUGHES	5870	SX	142	132	156	21.5	23.9	19.9	0	0	1	1	3	1	0	0	0	94	82	87	8.9	7.9	7.2	3.9	3.5	3.6	60.0	59.9	60.6
OTTILIE	2455	SX	149	139	151	21.5	23.5	19.9	0	1	0	1	4	2	0	0	0	94	85	89	8.9	7.9	7.4	3.7	3.7	3.8	60.3	60.4	60.7
SHISSLER	HR519	SX			159	21.5			0			1			0			92			8.4			3.7			60.6		
CORNELIUS	C614	SX		139	150	21.6	21.7		0	1		1	5		0	0		92	85		9.0	7.5		3.8	3.5		59.8	60.0	
HENKEL	H198	SX			141	21.6			0			1			0			93			8.9			3.6			60.5		
MIDDLEKOOP	M582	SX	142	131	155	21.6	23.7	19.8	0	1	1	2	4	2	0	0	0	94	87	91	8.9	8.1	7.5	3.8	3.5	3.7	60.1	59.7	60.5
AGRA SEED	3514	SX	128	135	152	21.7	25.6	19.8	0	0	2	1	3	2	0	0	0	92	85	80	9.1	7.6	7.5	3.8	3.6	3.8	59.6	60.1	60.6
HAWKEYE HYBRID	7272	SX			167	21.7			1			3			0			93			8.2			3.8			60.6		
TRELAY	8020	SX			145	21.7			0			1			0			92			8.6			3.9			60.1		
TRELAY	9800	SX			154	21.7			0			1			0			91			8.7			3.9			60.4		
GOLDEN HARVEST	H2532	SX	153	144	163	21.8	22.8	20.4	0	2	6	4	7	5	0	0	1	90	80	88	8.5	7.6	6.9	3.7	3.5	3.4	60.5	59.7	60.8
GUTWEIN	2611	SX			149	21.8			0			1			0			92			8.6			3.8			60.3		
AGRA SEED	3116	SX			158	21.9			0			1			0			88			8.6			4.0			60.2		
*GARST	8519	SX	138	137	160	21.9	24.1	19.6	0	0	2	1	4	4	0	0	0	93	87	85	8.7	7.8	7.5	3.8	3.8	3.8	60.1	60.6	60.8
GOLDEN HARVEST	H2477	SX		144	145	21.9	21.7		1	0		2	7		0	0		86	86		8.9	7.9		3.8	3.3		60.0	59.7	
*PIONEER	3362	SX	154	145	157	21.9	21.8	19.9	0	0	2	2	4	2	0	0	0	89	81	88	8.0	7.4	6.6	3.7	3.5	3.6	60.8	60.3	61.3
GUTWEIN	2650	SX			149	22.0			0			2			0			92			8.8			3.8			60.4		
KALTENBERG	7105	SX			142	22.0			0			1			0			92			8.1			3.8			60.7		
SOI	9100	SX		133	142	22.0	23.2		0	1		2	4		0	0		91	83		8.5	8.1		3.8	3.5		60.6	59.8	
NOBLE BEAR	690	SX			151	22.2			0			1			0			93			8.8			3.8			60.0		
HENKEL	H180	SX			148	22.4			0			1			0			93			9.0			3.6			60.1		
RENZE	6341	SX	144	139	146	22.4	22.1	20.1	0	2	11	1	3	4	0	0	0	94	87	87	8.7	7.4	7.3	3.7	3.5	3.5	60.1	60.2	60.5
M/W GENETICS	SX108AA	SX	145	141	142	22.5	22.0	20.1	0	0	8	0	4	3	0	0	0	92	85	86	9.1	7.5	7.0	3.6	3.4	3.7	60.0	60.4	61.0
CARGILL	7697	SX			157	22.7			0			1			0			93			8.3			4.0			60.4		
ASGROW	RX727	SX		143	148	22.8	24.7		0	0		1	2		0	0		93	86		8.6	7.2		3.8	3.7		60.2	60.4	
RENZE	6412	SX	144	146	152	22.9	25.2	21.5	0	1	5	1	3	3	0	1	0	93	84	86	8.4	7.5	7.4	4.0	3.7	3.7	60.5	60.3	60.8
HUGHES	5919	SX	137	136	145	23.0	23.0	20.1	0	1	4	2	4	3	0	0	0	91	78	81	9.1	7.5	7.2	3.7	3.5	3.6	59.9	60.4	60.3
HUGHES	6370	SX		145	137	23.0	24.5		0	2		2	5		0	0		93	83		9.3	7.7		3.6	3.6		59.8	60.3	
RENZE	6410	SX			132	23.0			0			3			1			92			9.1			3.7			59.9		
MARK	MRK93111	SX			149	23.1			0			3			0			88			8.0			3.9			60.8		
EK PREMIUM	EK7772	SX			150	23.2			0			2			1			86			8.7			3.8			60.4		
CORN COUNTRY	9111B	SX			136	23.4			0			1			0			92			9.1			3.7			59.9		
MIDDLEKOOP	M514	SX			145	23.4			0			1			0			95			8.0			3.8			60.8		
CARGILL	7877	SX			161	23.5			0			2			0			93			8.6			3.9			60.2		
CHALLENGER	CS510	SX			155	23.5			0			1			1			93			7.8			3.9			60.8		
MARK	MRK92113	SX			133	23.8			0			1			0			93			8.7			3.7			60.2		
AVERAGE OF ALL ENTRIES			140.0	131.0	146.2	20.2	21.1	18.4	0.0	0.5	2.9	1.3	3.6	2.7	0.2	0.1	0.3	91.1	82.9	85.8	8.6	7.7	7.3	3.7	3.5	3.6	60.4	60.2	60.6
AVERAGE OF WIDELY GROWN ENTRIES			138.3	128.3	145.4	19.5	20.0	17.9	0.1	0.5	2.2	1.1	3.1	2.9	0.3	0.1	0.3	91.7	83.1	86.0	8.7	7.7	7.3	3.7	3.5	3.6	60.2	60.3	60.6

SX = SINGLE CROSS. MSX = MODIFIED SINGLE CROSS. 3X = 3-WAY CROSS. 4X = 4-WAY CROSS. SXB = BLEND OF SINGLE CROSSES
* = WIDELY GROWN VARIETY ENTERED BY IOWA STATE UNIVERSITY

District 3
Designations Identifying Brands in the Yield Test

AGRA SEED .... Agra Seeds, Cedar Rapids, IA 52401
AGRIGENE .... Agrigene Seed Research, Des Moines, IA 50322
AG SERVICES .... Ag Services of America, Inc., Cedar Falls, IA 50613
AGVENTURE .... AgVenture of Iowa, Inc., Elgin, IA 52141
AMES BEST .... Ames Best Hybrids, Ames, IA 50010
*ASGROW .... Asgrow Seed Company, Des Moines, IA 50322
BLANEY .... Blaney Seeds, Inc., Madison, WI 53711
BOJAC .... Bo-Jac Hybrid Corn Co., Mt. Pulaski, IL 62548
CARGILL .... Cargill Hybrid Seeds, Minneapolis, MN 55440
CENEX/LAND O' LAKE .... Cenex/Land O' Lakes, Fort Dodge, IA 50501
CHALLENGER .... Challenger Seed Co., Cedar Falls, IA 50613
CORN COUNTRY .... Corn Country, Dike, IA 50624
CORNELIUS .... Cornelius Seed Corn Co., Bellevue, IA 52031
CROWS .... Crows Hybrid Corn Co., Milford, IL 60953
CURRY .... Curry Seed Co., Elk Point, SD 57025
DAIRYLAND .... Dairyland Seed Co., West Bend, WI 53095
*DEKALB .... Dekalb Plant Genetics, DeKalb, IL 60115
DYNA GROW .... United Agriproducts, Inc., Lubbock, TX 79423
EPLEY .... Epley Bros. Hybrids, Inc., Shell Rock, IA 50670
EK PREMIUM .... EK Premium Seed, Inc., Berwick, IL 61417
FONTANELLE .... Fontanelle Hybrids, Nickerson, NE 68044
FUNK'S G BRAND .... Ciba-Geigy Seed Division, Greensboro, NC 27419-8300
*GARST .... ICI Seeds Inc., Coon Rapids, IA 50058
GOLDEN HARVEST .... Golden Seed Co., Cordova, IL 61242
GOLDEN HARVEST .... ROB-SEE-CO Golden Harvest, Waterloo, NE 68069
GREAT LAKES .... Great Lakes Hybrids, Inc., Ovid, MI 48866
GUTWEIN .... Fred Gutwein & Sons, Inc., Francesville, IN 47946
HAWKEYE HYBRID .... Hawkeye Hybrids, Inc., Pella, IA 50219
HENKEL .... Henkel Seeds Inc., Mendota, IL 61342
HERMANN .... Brock G. Hermann, Manchester, IA 52057
HOBART .... Hobart Bros. Seed Corn Co., Lake City, IA 51449
HORIZON .... Horizon Seeds, Lincoln, NE 68501
HUGHES .... Hughes Hybrids, Woodstock, IL 60098
JACOBSEN .... Jacobsen Hybrid Corn Co., Inc., Lake View, IA 51450
JACQUES .... Jacques Seed Company, Prescott, WI 54021
KALTENBERG .... Kaltenberg Seed Farms, Waunakee, WI 53597
KLINE .... Kline Hybrids, Vinton, IA 52349
KRUGER .... Kruger Seed Company, Dike, IA 50624
LYNKS .... Lynks Seeds, Marshalltown, IA 50158
MARK .... Mark Seed Co., Perry, IA 50220
MCALLISTER .... McAllister Seed, Mt. Pleasant, IA 52641
MIDDLEKOOP .... Middlekoop Seed Corn Inc., Packwood, IA 52580
M/W GENETICS .... Midwest Seed Genetics, Carroll, IA 51401
NC+ .... NC+ Hybrids, Lincoln, NE 68504
NOBLE BEAR .... Noble Bear, Inc., Gibson City, IL 60936
*NORTHRUP KING .... New Northrup King Co., Ames, IA 50010
OTTILIE .... Ottilie RO Seed, Marshalltown, IA 50158
PAYCO .... Payco Seeds, Inc., Dassel, MN 55325
PFISTER .... Pfister Hybrid Corn Co., El Paso, IL 61738
*PIONEER .... Pioneer Hi-Bred International, Inc., Ankeny, IA 50021
RAMY .... Ramy International, Ltd., Mankato, MN 56001
RENZE .... Renze Hybrids, Inc., Carroll, IA 51401
SHISSLER .... Shissler Seed Company, Elmwood, IL 61529
SOI .... Sand Seed Service, Inc., Marcus, IA 51035
STINE .... Stine Seed Co., Adel, IA 50003
STURDY GROW .... Sturdy Grow Hybrids, Inc., Arcola, IL 61910
TERRA .... Terra International Inc., Sioux City, IA 51101
THOR-O-BRED .... Thor-O-Bred Seeds of IA, Inc., Dike, IA 50624
TRELAY .... Trelay, Inc., Livingston, WI 53554
UTHOFF .... Uthoff Hybrids, Cedar Rapids, IA 52404
WHATA HYBRID .... Whata Hybrid, Inc., Pearl City, IL 61062
WILSON .... Wilson Hybrids, Inc., Harlan, IA 51537
WYFFELS .... Wyffels Hybrids, Newton, IA 50208

*Companies with one or more widely grown entries made by Iowa State University.

Prepared by K. E. Ziegler, W. H. Vinson, and D. E. Carroll, instructor in agronomy and technicians.

File: Agronomy 1

Cooperative Extension Service, Agriculture and Home Economics Experiment Station, Iowa Crop Improvement Association, Iowa Corn Promotion Board, and the United States Department of Agriculture cooperating

Cooperative Extension Service, Iowa State University of Science and Technology and the United States Department of Agriculture cooperating. Robert M. Anderson, Jr., director, Ames, Iowa. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914.

THE IOWA CORN YIELD TEST COMPUTER DISKETTE HYBRID SELECTION PROGRAM ORDER FORM

Starting in 1987, data from all seven districts of the Iowa Corn Yield Test were made available on computer diskettes to further assist farmers in making decisions about which corn hybrids to plant.

Along with all of the information as it appears in the written reports, the computer diskettes include computer programs that allow farmers to insert their own drying and shrink costs, expected price of corn, and final moisture percentage after drying.

Using these specific criteria, the program calculates an adjusted economic value for each hybrid in the test. Farmers can then determine which hybrids might best fit their own production practices and provide the most profit. The computer program also can sort the hybrids by yield, moisture, adjusted value, root lodging, stalk lodging, dropped ears, stand, protein, oil, starch, or brand and then print the data as sorted.

An IBM personal or compatible computer supporting MS-DOS 2.0 or higher, with at least 512K memory is required. Call Extension Software Service at (515) 294-8658 for more information. See order form on back of this cut out section.

Table A. Field Data

	Reigelsberger Farm Nicollet loam			Bertram Farm* Tama silty clay loam			Broghammer Farm Kenyon loam		
Fertilizer applied, lb.	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Plowdown	—	—	—	19	90	120	—	—	60
Preplant	140	100	100	150	—	—	164	—	—
Starter	—	—	—	—	—	—	10	30	—
TOTAL	140	100	100	169	90	120	174	30	60
1990 crop	Soybeans			Soybeans			Corn		
Row width	30 inches			30 inches			30 inches		
Planting date	May 24			May 13			May 8 & 9		
Harvest date	Oct. 16 & 17			Oct. 3, 4 & 7			Sept. 30 & Oct. 1 & 2		
Average yield	152 bu./a			159 bu./a			128 bu./a		

*Field sampled for protein, oil, and starch percentage data.

Since 1988, new test equipment has been developed to measure composition of unground corn kernels. These instruments take 1 to 1½ minutes per sample, and measure moisture simultaneously with composition. Using these instruments, country elevators could test and segregate grain as it is received. Obviously all compositional factors cannot be high in the same hybrid. The grain market is exploring segmentation (identity preservation)—the production and marketing of certain hybrids for specific uses. This is an important change from the generic commodity approach now used.

The economic impact of compositional factors can be significant. Corn protein trades off with other protein sources in many feed rations. At $200 per ton for 44 percent protein soybean meal, the value of a 1 percent increase (e.g. from 8 percent to 9 percent) in corn protein is about 12 cents per bushel of corn. Likewise, an additional percent of oil yields about 14 cents per bushel in increased oil output in a wet processing plant. The additional ethanol or sweetener from an extra percent of starch provides 8 to 10 cents per bushel more revenue. Producers feeding livestock are in the best position to capture immediate benefits from this composition data. Country elevators with feed mills also have the ability to capitalize on increased protein in corn. The Iowa Corn Growers Association has prepared a publication to aid growers in using the nutrient data in this Corn Yield Test Report: *Nutrient Content and Feeding Value of Iowa Corn,* Iowa Corn Growers Association, Des Moines, Iowa 50265.

Hybrids with similar yields and agronomic characteristics may not be identical in corn protein. Therefore, feed costs can be reduced by selecting higher protein hybrids from a group with a similar yield potential. Weather and soil conditions will affect composition, but the relative ranking of hybrids does not change greatly. A higher protein hybrid will be higher than average regardless of environmental conditions that raise or lower the averages. The protein percentages reported are measures of crude protein and may not give an accurate indication of feed value if feed rations are balanced on individual amino acids rather than crude protein content.

1991 Field Data

The District 3 test was conducted on farms operated by Joe Reigelsberger near Rolfe in Pocahontas County, by Richard Bertram near Holland in Grundy County, and by Anthony Broghammer near Manchester in Delaware County. Field data are presented in table A.

At planting time, subsoil moisture for the district ranged from adequate to somewhat wet. Rainfall was variable over the district. The Pocahontas County location received well above normal rainfall in April and May and near normal rainfall in June, July, August, and September. The Grundy County location received well above normal rainfall in April and May, below normal in June, well below normal in July, and above normal in August and September. The Delaware County location received above normal rainfall in April and September, near normal rainfall in May, below normal in June, and well below normal rainfall in July and August. Temperatures for the district were above normal in April, well above normal in May, way above normal in June, near normal in July and August, and below normal in September. The average district yield was 15 bushels per acre above the mean of the five preceding years' averages. Average location yields are listed in table A.

Other Reports

Separate reports for variety performance are available for each district shown in figure 1. Limited supplies of these publications are available at your county extension office or from Publications Distribution, Printing and Publications Building, Iowa State University, Ames, Iowa 50011. Also, an IBM compatible diskette containing these data along with a hybrid selection program is available from Extension Software Service. See accompanying order form for details.

The 1991 Iowa Corn Yield Test Report:

Pm-660-1-91 District 1
Pm-660-2-91 District 2
Pm-660-3-91 District 3
Pm-660-4-91 District 4
Pm-660-5-91 District 5
Pm-660-6-91 District 6
Pm-660-7-91 District 7

Use of the Data in Advertisements

Iowa State University desires to maintain the credibility of data from the Iowa State Corn Yield Test. Misuse of this data in advertisements can have a negative effect on the perception of the value of this data. For advertising purposes, brand to brand comparisons should not be made unless more than one competitor brand is used in the ad and all entries of those brands in a given table are included in the ad. Specific advertisement statements by an individual company about the performance of its entries can be made as long as they are accurate statements about the data as published. A statement similar to: "See the official Iowa State University Extension *Corn Yield Test Report,* Pm-660-(1-7) for details," should be included in the ad.

ORDER FORM
Iowa Corn Yield Test
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Please send me computer diskettes of the following districts of the Iowa Corn Yield Test Results.

Year: _____

District 1 ☐ District 2 ☐ District 3 ☐ District 4 ☐
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Each District @ $20/copy _____

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